

CLAIMS

What is claimed and desired to be covered by Letters Patent is as follows:

1. An accessory for a ladder comprising:
 - a) a set of wheels adapted to be mounted on the feet of a ladder, said set of wheels including
 - (1) first second, third and fourth wheels, each of the wheels being identical to the other wheels and each wheel having
 - (A) a cylindrical body with an outer surface,
 - (B) a first end,
 - (C) a second end,
 - (D) a longitudinal axis extending between the first end and the second end,
 - (E) an axial bore extending along the longitudinal axis between the first end and the second end, and
 - (F) longitudinal ribs on the outer surface of the cylindrical body, the longitudinal ribs extending from the first end to the second end,
 - (2) a U-shaped bracket fixed to each of the wheels, each U-shaped bracket including

(A) a bight section which has first and second ends, with the first end of the bight section being located adjacent to the first end of the wheel associated with the bracket and the second end of the bight section being located adjacent to the second end of the bracket associated with the bracket, the bight section further including a first surface located closely adjacent to the wheel associated with the bracket and a second surface,

(B) a first leg on the first end of the bight section, the first leg being located closely adjacent to the first end of the wheel associated with the bracket, the first leg having a proximal end that is unitary with the bight section and a distal end that is located closely adjacent to the axial bore in the wheel associated with the bracket, the first leg having an axle-accommodating hole defined therethrough in the distal end thereof, the axle-accommodating hole

being aligned with the axial bore in the wheel associated with the bracket,

(C) a second leg on the second end of the bight section, the second leg being located closely adjacent to the second end of the wheel associated with the bracket, the second leg having a proximal end that is unitary with the bight section and a distal end that is located closely adjacent to the axial bore in the wheel associated with the bracket, the second leg having an axle-accommodating hole defined therethrough in the distal end thereof, the axle-accommodating hole being aligned with the axial bore in the wheel associated with the bracket,

(D) a first L-shaped mounting element on the second surface of the bight section adjacent to the first end of the bight section of the bracket, the first L-shaped mounting element including

(i) a body having a proximal end and a distal end, with the proximal end

being unitary with the bight section of the bracket, the distal end of the body of the first L-shaped mounting element being spaced apart from the second surface of the bight section of the bracket,

(ii) a longitudinal axis extending between the distal end of the body of the first L-shaped mounting element and the proximal end of the body of the first L-shaped mounting element, the longitudinal axis of the body of the first L-shaped mounting element being oriented at a right angle with respect to the longitudinal axis of the bight section of the bracket,

(iii) a first surface on the body of the first L-shaped mounting element,

(iv) a second surface on the body of the first L-shaped mounting element,

(v) a first L-shaped mounting element fastener-accommodating hole defined

through the body of the first L-shaped mounting element from the first surface to the second surface near the distal end of the body of the first L-shaped mounting element, the body of the first L-shaped mounting element having a screw thread defined thereon adjacent to the fastener-accommodating hole of the first L-shaped mounting element,

- (vi) a head unitary with the distal end of the body of the first L-shaped mounting element, the head having a proximal end unitary with the distal end of the body of the first L-shaped mounting element and a distal end spaced apart from the distal end of the body of the first L-shaped mounting element, the head including a longitudinal axis extending between the proximal end of the head and the distal end of the head and extending in the

direction of the longitudinal axis of the bight section of the bracket towards the second end of the bight section of the bracket, and

(vii) a securing mechanism on the first surface of the body of first L-shaped mounting element, the securing mechanism including a mounting element fixedly mounted on the first surface of the body of the first L-shaped mounting element, the mounting element of the securing mechanism including a fastener-accommodating hole defined therethrough to be coincident with the fastener-accommodating hole defined through the body of the first L-shaped mounting element, the securing mechanism further including a screw thread defined on the body of the securing mechanism adjacent to the fastener-accommodating hole defined through the body of the securing mechanism,

and a fastener accommodated in the fastener-accommodating holes defined through the mounting element of the securing mechanism and the hole defined through the body of the first L-shaped mounting element, the fastener of the securing mechanism including a screw thread that is threadably accommodated in the screw thread of the securing mechanism and the screw thread of the first L-shaped mounting element, the fastener further including a first end and a second end and a head on the first end, the second end of the fastener being adapted to abuttingly engage one surface of a leg of the ladder when the wheel associated therewith is in place on the foot of the ladder,

(E) a second L-shaped mounting element on the second surface of the bight section adjacent to the second end of the bight

section of the bracket, the second L-shaped mounting element including

- (i) a body having a proximal end and a distal end, with the proximal end being unitary with the bight section of the bracket, and the distal end being spaced apart from the second surface of the bight section of the bracket,
- (ii) a longitudinal axis extending between the distal end of the body of the second L-shaped mounting element and the proximal end of the body of the second L-shaped mounting element, the longitudinal axis of the body of the second L-shaped mounting element being oriented at a right angle with respect to the longitudinal axis of the bight section of the bracket,
- (iii) a first surface on the body of the second L-shaped mounting element,
- (iv) a second surface on the body of the second L-shaped mounting element,

and

- (v) a head unitary with the distal end of the body of the second L-shaped mounting element, the head of the second L-shaped mounting element having a proximal end unitary with the distal end of the body of the second L-shaped mounting element and a distal end spaced apart from the distal end of the body of the second L-shaped mounting element, the head of the second L-shaped mounting element including a longitudinal axis extending between the proximal end of the head of the second L-shaped mounting element and the distal end of the head of the second L-shaped mounting element and extending in the direction of the longitudinal axis of the bight section of the bracket towards the first end of the bight section of the bracket, and

(F) when the one end of the fastener of the

securing mechanism on the first L-shaped securing element is abuttingly engaged with the leg of the ladder, the U-shaped bracket associated with the securing mechanism is secured to the ladder;

b) an axle extending through the axial bore in each wheel, the axle being rotatably supported by the first and second legs of the bracket associated with each wheel adjacent to the axle-accommodating holes defined in the first and second legs, whereby each of the wheels is rotatably mounted on a U-shaped bracket by an axle, the axle having a longitudinal axis;

c) an axle extension extending between the first and second wheels, said axle extension including

(1) a first section, the first section of said axle extension being aligned with the axle in the first wheel, the first section of said axle extension including a proximal end that is unitary with the axle in the first wheel, a distal end that is located between the first wheel and the second wheel when the first and second wheels are attached to the feet of the ladder, the first section of said

axle extension extending in the direction of the longitudinal axis of the axle of the first wheel toward the second wheel,

(2) a second section, the second section of said axle extension being aligned with the axle in the second wheel, the second section of said axle extension including a proximal end that is unitary with the axle in the second wheel, a distal end that is located between the first wheel and the second wheel when the first and second wheels are attached to the feet of the ladder, the second section of said axle extension extending in the direction of the longitudinal axis of the axle of the second wheel toward the first wheel, the distal end of the second section of said axle extension being telescopingly attached to the distal end of the first section of said axle extension when said axle extension is in use, a plurality of pin-accommodating holes defined in the first section of said axle extension near the distal end of the first end of said axle extension, a plurality of pin-accommodating

holes defined in the second section of said axle extension near the distal end of the second section of said axle extension, a pin connecting one of the pin-accommodating holes in the first section of said axle extension to one of the pin-accommodating holes in the second section of said axle extension to attach the first section to the second section of the axle extension when said axle extension is in use;

d) a gear mechanism mounted on the first leg of the U-shaped bracket associated with the first wheel, the gear mechanism including

- (1) an attaching arm unitary with the axle associated with the U-shaped bracket associated with the first wheel, the attaching arm being L-shaped and having a proximal end unitary with the axle associated with the first wheel and a distal end which is offset from longitudinal axis of the axle associated with the first wheel, and
- (2) a gear wheel rotatably mounted on the distal end of the attaching arm to rotate in a plane that is perpendicular the longitudinal axis

of the axle associated with the first wheel, the gear wheel having an outer perimeter and including a plurality of gear teeth on the outer perimeter; and

- e) an operating handle, said operating handle including
 - (1) a first section having a distal end, a gear tooth engaging element on the distal end of the first section of said operating handle, the gear tooth engaging element engaging the gear teeth of the gear wheel to rotate the gear wheel, the first section of said operating handle further including a proximal end and a plurality of pin accommodating holes defined therein adjacent to the proximal end of the first section,
 - (2) a second section having a distal end and a proximal end and a plurality of pin-accommodating holes defined therein adjacent to the distal end of the second section, the first section of said operating handle being telescopingly received in the second section of said operating handle, and
 - (3) a pin received through pin-accommodating holes

defined in the first and second sections of said operating handle to attach the first section of the operating handle to the second section of the operating handle.

2. An accessory for a ladder comprising:

- a) a plurality of wheels, each wheel having an attaching mechanism thereon which attaches the wheel to the foot of a ladder when the wheel is in use;
- b) an element that attaches two wheels of said plurality of wheels together when the two wheels are in place on the ladder;
- c) a gear mechanism mounted on one wheel of the two wheels, said gear mechanism including a gear wheel mounted on the one wheel, the gear wheel including a plurality of gear teeth; and
- d) an operating handle that has a distal end sized to engage the gear teeth of the gear wheel to rotate the gear wheel.